

Amendments to the Claims:

- 1-34. (Cancelled)
35. (New) An HIV vaccine composition characterized in that it comprises at least one stabilized Tat antigen resistant to proteolytic degradation, said stabilized antigen being selected from the group consisting of:
- a) a complex Tat/ligand comprising at least an HIV Tat protein or a Tat fragment of at least 11 amino acids, and a non-metal ligand of Tat, excluding the HIV gp120 protein,
  - b) an artificial variant of an HIV Tat protein or of a Tat fragment of at least 11 amino acids, wherein one to seven cysteines located at positions 22, 25, 27, 30, 31, 34 and/or 37 of the Tat amino acid sequence are modified with a hydrophobic group and/or substituted with a hydrophobic amino acid chosen from: Leucine, Isoleucine, Methionine, Phenylalanine, Tryptophan, Tyrosine and the hydrophobic analogs of said amino acids, and
  - c) a complex between the artificial variant of a Tat protein or of a Tat fragment defined in b), and a non-metal ligand of Tat.
36. (New) The vaccine composition as claimed in claim 35, characterized in that said non-metal ligand in a) or in c) is protein, lipid, carbohydrate, nucleotide or mixed in nature.
37. (New) The vaccine composition as claimed in claim 36, characterized in that said non-metal ligand in a) or in c) is a polysulfated sugar chosen from: dextran sulfate, pentosan polysulfate and polysulfated glycosaminoglycans, including heparin or heparan sulfate.
38. (New) The vaccine composition as claimed in claim 37, characterized in that said heparin is a heparin having a molecular weight of 15000 Da or a heparin fragment having a molecular weight of 6000 Da.

39. (New) The vaccine composition as claimed in claim 36, characterized in that said non-metal ligand in a) or in c) is the HIV Vpr protein.
40. (New) The vaccine composition as claimed in claim 35, characterized in that at least the four cysteines at positions 25, 27, 30 and 31 are substituted with a hydrophobic amino acid and/or modified with a hydrophobic group.
41. (New) The vaccine composition as claimed in claim 35, characterized in that said hydrophobic amino acid is selected from the group consisting of: a leucine, a tryptophan and a phenylalanine and/or said hydrophobic group is S-tert-butyl.
42. (New) The vaccine composition as claimed in claim 35, characterized in that said stabilized Tat antigen derives from an inactivated Tat protein or from an inactivated Tat fragment.
43. (New) The vaccine composition as claimed in claim 42, characterized in that said inactivated Tat protein or said inactivated Tat fragment comprises the substitution of each of the cysteines at positions 22, 34 and 37 to serines or else the substitution of each of the arginines at positions 52 and 53 to glutamines.
44. (New) The vaccine composition as claimed in claim 35, characterized in that said Tat protein or the fragment of said protein is chosen from: the Tat protein of 101 amino acids, the Tat protein of 86 amino acids, the fragment 1 to 57 of Tat and the fragments of at least 11 amino acids included in the proteins or fragment above.
45. (New) The vaccine composition as claimed in claim 35, characterized in that said stabilized Tat antigen derives from the Tat protein of the sequence SEQ ID NO: 1 or from a fragment of at least 11 amino acids of this sequence.

46. (New) The vaccine composition as claimed in claim 35, characterized in that said Tat protein or said Tat fragment in a) is also complexed with a metal ion chosen from polyvalent cations, preferably divalent cations, such as  $\text{Zn}^{2+}$  or  $\text{Cd}^{2+}$ .
47. (New) The vaccine composition as claimed in claim 35, characterized in that said artificial variant of a Tat protein or of a Tat fragment in b) or in c) is also complexed with a metal ion chosen from polyvalent cations, preferably divalent cations, such as  $\text{Zn}^{2+}$  or  $\text{Cd}^{2+}$ .
48. (New) The vaccine composition as claimed in claim 35, characterized in that said Tat protein or said Tat fragment is a monomer.
49. (New) The vaccine composition as claimed in claim 35, characterized in that said Tat protein or said Tat fragment is an oligomer, preferably a dimer.
50. (New) The vaccine composition as claimed in claim 49, characterized in that said oligomer, preferably dimer, is formed from the covalent association of said Tat protein and/or of the fragment of said protein by means of an intermolecular disulfide bond involving one of the cysteines at position 22, 25, 27, 30, 31, 34 or 37.
51. (New) The vaccine composition as claimed in claim 50, characterized in that said disulfide bond involves one of the cysteines at position 22, 34 or 37.
52. (New) The vaccine composition as claimed in claim 51, characterized in that the Tat dimer is formed from the association, by means of a disulfide bridge between the cysteines at position 34, of two Tat proteins or of two Tat fragments of at least 11 amino acids comprising a serine at positions 22 and 37 and a leucine at positions 25, 27, 30 and 31.

53. (New) The vaccine composition as claimed in claim 49, characterized in that said oligomer, preferably dimer, is formed from the noncovalent association of said Tat protein and/or of the fragment of said protein by means of metal ions, preferably of polyvalent cations, in particular divalent cations such as  $\text{Zn}^{2+}$  and  $\text{Cd}^{2+}$ .
54. (New) The vaccine composition as claimed in claim 35, characterized in that said Tat protein and/or the fragment of said protein, which are optionally modified, are in the form of a polynucleotide or of a recombinant vector encoding said protein and/or said fragment.
55. (New) The vaccine composition as claimed in claim 35, characterized in that it comprises a pharmaceutically acceptable vehicle and/or an adjuvant and/or a carrier substance.
56. (New) The vaccine composition as claimed in claim 55, characterized in that it consists of said stabilized antigen and a pharmaceutically acceptable vehicle and/or a carrier substance.
57. (New) The vaccine composition as claimed in claim 55, characterized in that said adjuvant is alumina hydroxide.
58. (New) A stabilized Tat antigen as claimed in claim 35, for use as vaccine for the prevention and/or treatment of an HIV infection in humans.
59. (New) A method for the preparation of a vaccine for use in the prevention and/or treatment of an HIV infection in humans comprising preparing a vaccine from a stabilized Tat antigen as claimed in claim 35.
60. (New) A peptide complex, characterized in that it consists of:
  - a variant of a Tat protein or of a Tat fragment as defined in claim 35, associated

with

- a metal ligand of Tat and/or a non-metal ligand of Tat.

61. (New) A protein or peptide fragment, characterized in that it is chosen from a variant of a Tat protein or of a Tat fragment as defined in claim 35.
62. (New) A method of preparing a stabilized Tat antigen, characterized in that it comprises at least:
  - the preparation, by any appropriate means, of an HIV Tat protein or of a Tat fragment as defined in claim 35, and simultaneously or sequentially,
  - the modification with a hydrophobic group, and/or the substitution with a hydrophobic amino acid chosen from : Leucine, Isoleucine, Methionine, Phenylalanine, Tryptophan, Tyrosine and the hydrophobic analogs of said amino acids, of one to seven cysteines located at positions 22, 25, 27, 30, 31, 34 and/or 37 of the Tat amino acid sequence, and eventually, the formation of a complex between said modified Tat protein or said modified Tat fragment, and a non-metal ligand of Tat and/or a metal ligand of Tat.
63. (New) A polynucleotide or a mixture of polynucleotides selected from the group consisting of:
  - a) a polynucleotide or a mixture of polynucleotides comprising the sequence encoding an HIV Tat protein or a Tat fragment of at least 11 amino acids as defined in claim 35, and the sequence encoding a peptide ligand of Tat, and
  - b) a polynucleotide comprising the sequence encoding a variant of an HIV Tat protein or of a Tat fragment also as defined in claim 35.
64. (New) A recombinant vector comprising the polynucleotide as defined in a) or in b) of claim 63.
65. (New) A mixture of recombinant vectors each comprising polynucleotides of the mixture as defined in a) of claim 63.

66. (New) A eukaryotic cell modified with a polynucleotide, a recombinant vector or a mixture as defined in claim 63.